

Academic Year/course: 2022/23

30822 - General Food Hygiene

Syllabus Information

Academic Year: 2022/23

Subject: 30822 - General Food Hygiene

Faculty / School: 105 - Facultad de Veterinaria

Degree: 568 - Degree in Food Science and Technology

ECTS: 6.0

Year: 3

Semester: First semester

Subject Type: Compulsory

Module:

1. General information

1.1. Aims of the course

This subject contributes to the specific objective of the degree in relation to train professionals in food safety both at the service of the companies and the Public Administration and also in the free professional practice. However, the skills acquired are also the basis of the professional exercise of the rest of the profiles mentioned in the verification report of the degree. It is included in the course "Microbiology and food hygiene". It pretends students to acquire knowledge of food toxicology and hygiene as well as skills and abilities that allow them to identify hazards at any stage of the food chain and propose measures for their prevention and control. The knowledge and skills acquired in the subject will be expressed in an applied way in the subjects of the course that is taught later.

The approaches and objectives of the subject are aligned with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the learning outcomes of the subject provides training and competence to contribute to some extent to its achievement:

Goal 2: Zero hunger.

Goal 3: Health and well-being.

Goal 4: Quality education.

Goal 6: Clean water and sanitation.

Goal 7: Affordable and clean energy.

Goal 12: Responsible production and consumption.

Goal 17: Partnerships to achieve the Goals.

1.2. Context and importance of this course in the degree

This subject is directly related to "Applied Food Hygiene" that is taken in the second semester of the course, which it supports, and both are in turn the basis of the 4th year subject entitled "Food Safety Management". Students passing the subject, will have acquired the skills and knowledge necessary to apply the general concept of food hygiene to the different food groups. In the same way, this knowledge supports the realization of the "subject of integration of teachings". This subject contributes to the acquisition of the competences detailed in point 3.2. of this guide.

1.3. Recommendations to take this course

In general, this subject requires having previously completed all the basic training subjects programmed in the first year of the Degree and those belonging to the course of "Microbiology and food hygiene" programmed in the second year. In particular, it is considered a requirement to have taken the subjects of Food Microbiology and Microbiological Analysis of Food of the second year with which it is closely related, as well as to be enrolled in the subject of Food Technology I that is taught in the same semester. It would also be advisable to have an average command of English.

2. Learning goals

2.1. Competences

Manage information, search for sources, information gathering and analysis, etc.

Use ICTs

Teamwork

Think and reason critically

Work autonomously and carry out a self-assessment

Respect the diversity and plurality of ideas, people and situations

Transmit information, orally and in writing, both in Spanish and in English

Show environmental sensitivity, assuming an ethical commitment

Negotiate both with specialists in the area and with people who are not experts in the field

Adapt to new situations and solve problems

Undertake and be motivated by quality

That students have demonstrated to possess and understand knowledge in an area of study that starts from the base of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects involving knowledge from the forefront of their field of study.

That students know how to apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

That students have the ability to gather and interpret relevant data (normally within their area of study) to make judgments that include a reflection on relevant issues of a social, scientific or ethical nature

That students can transmit information, ideas, problems and solutions to both a specialized and non-specialized audience.

That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy

Specifics

Perform physical, chemical, microbiological and sensory analyses of raw materials and food and understand the results obtained.

Identify the physical, chemical and microbiological agents that cause food alteration and select the most appropriate strategies for their prevention and control.

Identify hazards in the food chain, assess risk and design prevention and control systems.

Apply the basic tools of food safety management.

Design, apply and maintain self-control protocols, internal audits and traceability systems in the food industry.

Advise on the interpretation and application of food legislation, reports and administrative files.

Provide scientific and technical advice to the food industry.

Communicate knowledge in food science and technology, using the fundamental concepts, methods and tools of this discipline.

2.2. Learning goals

The student, to pass this subject, must demonstrate the following results...

1. Know the main terms associated with the concept of Food Hygiene and Food Safety and the fundamentals of food hygiene.
2. Identify hazardous agents that may be present at any stage of the food chain.
3. Analyze the contributing factors and triggers that determine the presence and survival of hazards in food.
4. Know the main morbid syndromes caused by food hazards, identify their causes and evaluate their epidemiology in order to propose preventive measures and immediate action for their control.
5. Identify what are the hygienic requirements to be implemented in food industries and establishments and to be able to organize sanitation measures in the food industry.
6. Train food handlers
7. Establish a correct and effective communication, oral and written in Spanish and a more comprehensive reading in English.

2.3. Importance of learning goals

The acquisition of competences from the learning results of this subject contribute in an important way, along with the rest of the subjects of the course "Microbiology and food hygiene", to the training of students for the professional performance of the degree. Specifically, the subject has its fundamental application in professional opportunities related to food safety but its knowledge is basic for the exercise of tasks related to the management and quality control of products in the food field, food processing, development and innovation of processes and products in the food field. That is why it should be noted that their learning results are generally applicable to the objectives of the degree.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that he/she has achieved the expected learning results through the following assessment activities

1: Global Written Exam.

Value: 75% of the final grade. It will be held on the dates determined by the academic calendar of the University. The exam will consist of the development of questions that allow to evaluate the degree of understanding of the subject through questions that try to demonstrate the acquisition of the learning outcomes listed in this guide.

In this test, the student's ability to acquire knowledge, written expression and writing will be assessed; likewise, the critical and applicative capacity of the acquired knowledge will be assessed.

Answers that demonstrate deep and/or conceptual ignorance of the subject will be negatively valued.

The grade obtained (75% of the total) will be maintained in the second call of the subject as long as it exceeds the grade of 5 out of 10.

2: Practical knowledge exam:

Value: 25% of the final grade.

The evaluation of practical knowledge will be carried out by performing the following tests:

1.- Characterization of a chemical food hazard (50% of the qualification of the practical part).

The results obtained in the characterization exercises of a chemical hazard agent will be evaluated, through the presentation and discussion of a work carried out in a group (30% of the qualification of the practical part) and the realization of an individual questionnaire (20% of the qualification of the practical part), programmed in the practical sessions in which the characterization of the chemical danger agent is worked.

In the case of obtaining an average grade in both tests less than 5.0, the student must take an exam on this part of the subject, coinciding with the completion of the global written exam (value: 50% of the grade of the practical part).

In the event of unjustified failure to attend any of these sessions on the characterization of chemical food hazards, the evaluation of practical knowledge will be carried out by conducting an individual written exam in which a series of questions related to the characterization of the chemical food hazard worked on in the practical sessions must be answered (value: 50% of the qualification of the practical part).

2.- Characterization of a biological food hazard (50% of the qualification of the practical part). The results obtained in the characterization exercises of a biological hazard agent will be evaluated, through the presentation and discussion of a work carried out in a group (30% of the qualification of the practical part) and the realization of an individual questionnaire (20% of the qualification of the practical part), programmed in the practical sessions in which the characterization of the biological danger agent is worked. In the case of obtaining an average grade in both tests less than 5.0, the student must take an exam on this part of the subject, coinciding with the completion of the global written exam (value: 50% of the grade of the practical part).

In the event of unjustified failure to attend any of these sessions on the characterization of biological food hazards, the evaluation of practical knowledge will be carried out by conducting an individual written exam in which a series of questions related to the characterization of the food hazard worked on in the practical sessions must be answered (value: 50% of the qualification of the practical part).

In the case of unjustified absence from the practical laboratory sessions, a written exam must be carried out, in which the student must answer questions related to the contents worked during the sessions. This test will be carried out at the same time that the global written exam is carried out and it will be necessary to pass it (obtain at least 5 points out of 10) to be able to pass the evaluation of the practical knowledge of the subject.

The grade obtained (25% of the total) in the practical knowledge exam will be maintained in the second call of the subject as long as it exceeds the grade of 5 out of 10. To obtain the final grade it is mandatory to take the two exams (global writing and practical knowledge) and obtain in each of them a minimum grade of 5 points out of 10. The passing of the practical knowledge test will be valid in the two calls of the next academic year.

Qualification system: in accordance with the Regulation of Learning Evaluation Standards of the University of Zaragoza (Governing Council Agreement of December 22, 2010), the results obtained by the student will be graded according to the following numerical scale from 0 to 10, with expression of one decimal, to which its corresponding qualitative qualification may be added:

0-4.9: Failed.

5.0-6.9: Approved.

7.0-8.9: Notable

9.0-10: Outstanding

The mention of "Matrícula de Honor" will be awarded among students who have obtained a grade higher than 9.0. For this subject there is no limitation in the granting of the Honorable Mention.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is based on lectures and practical sessions carried out by groups of students. Practical sessions (Laboratory and informatic tools) are focused on looking into theoretical aspects developed in lectures.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available for the student via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

Further information regarding the course will be provided on the first day of class.

Students must follow the regulations described in:

- Prevention: A guide for students at the University of Zaragoza: https://uprl.unizar.es/sites/uprl.unizar.es/files/archivos/Procedimientos/guia_preventiva_para_estudiantes.pdf
- Manual de seguridad en los laboratorios de la Universidad de Zaragoza <https://uprl.unizar.es/inicio/manual-de-procedimientos>

https://uprl.unizar.es/sites/uprl.unizar.es/files/archivos/Procedimientos/manual_de_seguridad_en_los_laboratorios_de_la

In addition, students will follow as well any instructions related to biosecurity given by the professor.

4.2. Learning tasks

The course includes the following learning tasks:

38 hours of participatory lectures, 2 hours of seminars and 7 practical sessions of 2/3 hours each related to:

- information resources in food hygiene (1 session at the computer classroom)
- identification and characterization of biotic and abiotic hazards (4 sessions at the computer classroom)
- general principles of food hygiene (2 sessions at the pilot plant)

The development of practical sessions is performed by the students. Different topics are assigned by the teacher to make a powerpoint presentation in groups.

4.3. Syllabus

The course will address the following topics:

1st Section.- General aspects and concepts related to Food Hygiene

- Concepts of Food Hygiene, Food Safety, Food Security and Aptitude for human consumption.
- Global approach in the Food chain.

2nd Section. ? Food-borne hazards (Anthropogenic sources, natural contamination?)

- Introduction to food toxicology: Food contaminants: Concepts and classification. Toxicological assessment.
- Natural toxins in Food
- Food allergens.
- Types and sources of abiotic contamination in food.
- Origin and prevention of environmental contaminants.
- Residues of veterinary drugs in foodstuffs: Origin and prevention
- Origin and prevention of contaminants produced in the manufacturing and preparation processes in the food industry.
- Types and sources of biotic contamination in food.
- Biological hazards: Bacteria, viruses, parasites. Main foodborne diseases. Origin and prevention of mycotoxicosis.

3rd Section.- Food Hygiene in the production and manufacturing of food.

- Hygiene in primary production.
- Hygiene in establishments, equipment and work utensils: Design, maintenance, cleaning and disinfection, pest control, residues management, water control.
- Staff hygiene in food industry: Health status, personal care, culinary food handlers behavior.

2. Practical sessions

- **Practice nº 1.-** Sessions at the computer classroom: Information resources. Evolution of epidemiological data of infections and food poisoning outbreaks. Knowledge of contamination sources and propagation system of outbreaks.
- **Practices nº 2, 3, 4 y 5.** Food hazard characterization. It will be developed in four sessions. Every group of students will be commissioned, at least, one study of abiotic contamination and another one of biotic contamination, focused on making a powerpoint presentation and afterwards discussing the cases with other students.

- **Practice nº 6.** General principles of food hygiene I. Approach of hygienic control measures in food processes. Inspection of the raw materials (control of antimicrobial residues in food), heat treatment effectiveness (alpha-amylase test, alkaline phosphatase test), water control (chemical and microbiological hazards).
- **Practice nº 7.** General principles of food hygiene II. Cleaning and disinfection in food industry (Evaluation of the disinfectant efficacy and the verification of cleaning and disinfection operations).

4.4. Course planning and calendar

For further details concerning the timetable, classroom and further information regarding this course please refer to the website of the Faculty of Veterinary Medicine: <http://veterinaria.unizar.es/gradocta/>. This link will be updated at the beginning of each academic year.